

Message Text

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AID FOR ADMINISTRATOR PARKER

PASS ALSO US GEOLOGICAL SURVEY, RESTON, VA.

PARIS FOR SCIENCE ATTACHEE

YAOUNDE FOR RDO

E.O. 11652: N/A

TAGS: EGEN, EMIN, CT

SUBJECT: BANGUI MAGNETIC ANOMALY

REF: 75 STATE 282061, 288081 (NOTAL)

1. U.S. GEOLOGICAL SURVEY TEAM LED BY DR. ROBERT REGAN AND INCLUDING DR. BRUCE MARSH OF JOHNS HOPKINS UNIVERSITY AND DR. ALFRED CHIDESTER OF USGS VISITED CENTRAL AFRICAN REPUBLIC JAN. 17 TO 27 IN ORDER TO INVESTIGATE IN GREATER DETAIL A MAGNETIC ANOMALY WHICH IS CENTERED ON THE CENTRAL AFRICAN REPUBLIC. THE ANOMALY WHICH WAS DISCOVERED BY AMERICAN SATELLITES IN THE POGO SERIES HAS BEEN THE SUBJECT OF FRECENT PRESS SPECULATION FOCUSING PRIMARILY ON POSSIBLE

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ECONOMIC BENEFITS. USGS TEAM WHILE NOT IGNORING SUCH LONG RANGE

POSSIBILITIES IS PRIMARILY INTERESTED IN THE ANOMALY AS A UNIQUE SCIENTIFIC PHENOMENON. IT IS WITHIN THIS CONTEXT THAT THE FIELD TRIP TO THE CAR WAS UNDERTAKEN AND EXPLAINED TO GOCAR OFFICIALS INCLUDING PRESIDENT BOKASSA.

2. USGS TEAM IN COMPANY OF EMBASSY ECONOMIC OFFICER, ORSTOM SCIENTISTS (FRENCH OFFICE DE LA RESEARCH SCIENTIFIQUE ET TECHNIQUE OUTRE-MER), AND CAR OFFICIALS FROM MINISTRY OF MINES AND GEOLOGY MADE TWO FIELD TRIPS TO OUTLYING AREAS IN ORDER TO TAKE MAGNETIC READINGS AND ROCK SAMPLES. THE TRIP WAS QUITE SUCCESSFUL BUT MUCH WORK REMAINS BEFORE A FULL EXPLANATION OF THE ANOMALY IS POSSIBLE.

3. FOLLOWING FROM USGS PRELIMINARY TRIP REPORT: QUOTE THE BANGUI MAGNETIC ANOMALY WAS THE FIRST MAGNETIC ANOMALY TO BE DISCOVERED USING SATELLITE MEASUREMENTS. ANOMALIES OF SUCH LARGE DIMENSIONS WERE NEVER KNOWN TO EXIST PRIOR TO THIS DISCOVERY AND THE ANOMALY UNDOUBTEDLY REFLECTS FUNDAMENTAL PROPERTIES OR STRUCTURES OF THE ROCKS IN THE OUTER SKIN OF THE EARTH. THUS, IT IS OF GREAT SCIENTIFIC INTEREST TO ESTABLISH THE ORIGIN OF THE ANOMALY; THESE RESULTS MAY ALSO BE OF PRACTICAL IMPORTANCE IN ASCERTAINING THE DIRECT OR INDIRECT ECONOMIC IMPORTANCE OF THE ANOMALY.

QUOTE: A PRELIMINARY INTERPRETATION OF THE CAUSE OF THE ANOMALY BASED ON SATELLITE AND AIRCRAFT MEASUREMENTS INDICATED THAT A HUGE CRUSTAL FEATURE APPROXIMATELY 700KM BY 200KM BENEATH THE CENTRAL AFRICAN REPUBLIC COULD CAUSE THE ANOMALY. HOWEVER, AN INTERPRETATION BASED ONLY ON MAGNETIC DATA IS NOT UNIQUE. BUT, THE POSTULATED BODY DOES CORRELATE WITH KNOWN TECTONIC PATTERNS IN THIS AREA. A MORE COMPLETE INTERPRETATION REQUIRES OBTAINING ROCK SAMPLES FOR LABORATORY ANALYSIS AND THAT CRITICAL GROUND MAGNETIC MEASUREMENTS BE MADE. IN THIS WAY WE WOULD BE ABLE TO USE THE RESULTS OF THE ROCK ANALYSIS IN OUR MODEL STUDIES AND ALSO HAVE GROUND, AIRCRAFT, AND SATELLITE MAGNETIC MEASUREMENTS TO FURTHER CONSTRAIN THE INTERPRETATION. IN ADDITION, IT WAS IMPERATIVE TO VISIT VARIOUS FIELD SITES, AND TALK TO RESIDENT GEOLOGISTS, TO GAIN A BETTER UNDERSTANDING OF THE GEOLOGY OF THE CENTRAL AFRICAN REPUBLIC. THUS OUR TRIP WAS NECESSARY TO STUDY THE GEOLOGY, COLLECT ROCK SAMPLES, AND PERFORM GROUND MAGNETIC MEASUREMENTS.

QUOTE: BASED ON THE GEOLOGIC MAP AND THE GROUND MAGNETIC MEASUREMENTS OF ORSTOM, THE DIRECTOR GENERAL OF MINES, THE U.S. GEOLOGICAL SURVEY TEAM, AND ORSTOM DESIGNED A FIELD PROGRAM THAT WOULD ENABLE LIMITED OFFICIAL USE

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US TO SAMPLE THE ROCKS OF INTEREST AND COLLECT GROUND MEASUREMENTS IN CRUCIAL AREAS. IN ADDITION, ORSTOM PROVIDED A MAGNETIC SURVEY TEAM TO ASSIST US IN COLLECTING GROUND MAGNETIC MEASUREMENTS. THROUGH-

OUT OUR TRIP WE COLLECTED ROCK SAMPLES OF VARIOUS GEOLOGIC UNITS, AND CONDUCTED LOCAL MAGNETIC SURVEYS AT EACH STOP.

QUOTE: AT THIS TIME IT IS MUCH TOO EARLY TO SAY ANYMORE ABOUT THE INTERPRETATION OF THE BANGUI ANOMALY. HOWEVER, THE TRIP HAS PRO-

VIDED US WITH THE INFORMATION NECESSARY TO OUTLINE A PLAN FOR FUTURE WORK.

QUOTE: FIRST OF ALL, THE ROCK SAMPLES WILL BE SENT BACK TO THE U.S. GEOLOGICAL SURVEY LABORATORIES FOR EXTENSIVE ANALYSIS. THE RESULTS OF THESE ANALYSIS WILL BE UTILIZED IN THE FURTHER INTERPRETATION OF THE ANOMALY. THE RESULTS OF THE ANALYSIS WILL BE MADE AVAILABLE TO CAR MINISTRY OF MINES AND GEOLOGY.

QUOTE: WE WOULD LIKE TO REQUEST ORSTOM TO CONDUCT SOME MORE GROUND MAGNETIC MEASUREMENT IN THE AREA THAT WE HAVE OUTLINED ON THE ATTACHED MAP. THESE MEASUREMENTS COMBINED WITH THE MEASUREMENTS MADE DURING OUR TRIP AND WITH THE EXCELLENT MEASUREMENTS MADE BY ORSTOM IN 1956 WILL BE UTILIZED TO PRODUCE A GROUND MAGNETIC ANOMALY MAP.

QUOTE: IT WAS INDEED UNFORTUNATE THAT MECHANICAL DIFFICULTIES PREVENTED USE OF THE HELICOPTERS. IF POSSIBLE THE HELICOPTERS SHOULD BE MADE AVAILABLE FOR BOULVERT (ORSTOM) AND ROIDEVIN (UNIVERSITY) TO VISIT SEVERAL CRITICAL OUTCROPS THAT CANNOT BE REACHED IN ANY OTHER WAY. ROCK SAMPLES AND MEASUREMENTS AT THESE LOCATIONS WOULD BE ESSENTIAL IN THE ANOMALY STUDY.

QUOTE: THE U.S. GEOLOGICAL SURVEY WOULD LIKE TO OBTAIN COPIES OF THE GRAVITY MEASUREMENTS THAT ORSTOM HAD MADE IN THE CAR. THESE WILL BE COMBINED WITH SATELLITE MEASUREMENTS TO PRODUCE A GRAVITY ANOMALY MAP THAT WILL BE OF CONSIDERABLE IMPORTANCE IN STUDYING THE MAGNETIC ANOMALY.

QUOTE: FINALLY, WE PLAN TO WORK ON A COOPERATIVE BASIS WITH MINISTRY OF MINES AND GEOLOGY, THE UNIVERSITY, AND ORSTOM IN PRODUCING A DETAILED INTERPRETATION OF THE ANOMALY. HOPEFULLY, THIS CAN BE ACCOMPLISHED WITHIN SIX MONTHS. END QUOTES

4. COMMENTS FOLLOW SEPTEL.

5. CLASSIFIED FOR TRANSMISSION ONLY. DECONTROL UPON RECEIPT.

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